4.2 Interactive Processing Mode (SMTP two-way)
4.2.1 Outline of interactive processing mode (SMTP two-way)

This processing mode is the processing mode to be used to send a message immediately after a message for the user system is generated at NACCS Center server. Therefore, this processing mode provides faster response comparing to e-mail style processing mode (Gateway). Since NACCS center server sends messages to user systems in real time, it is required that each user system has to be online all the time, and has to achieve high availability.

In addition, due to the fact that the protocol used when retrieving processing result messages is different, this processing mode is not a processing mode which computers connected to the user system can use as is, so in order to carry out EDI with the NACCS Center server using the software package (e-mail style processing mode) installed on computers connected to the user system, it is necessary that the user system is carefully configured.

The interactive processing mode (SMTP two-way) can be implemented only on environments where a dedicated SMTP server is installed on the user side and connected with a leased line or optical broadband networks.

Figure 4.2.1 shows outline of the interactive processing mode (SMTP two-way) implemented in NACCS. In addition, for e-mail sending, refer to "4.6.1 e-mail".
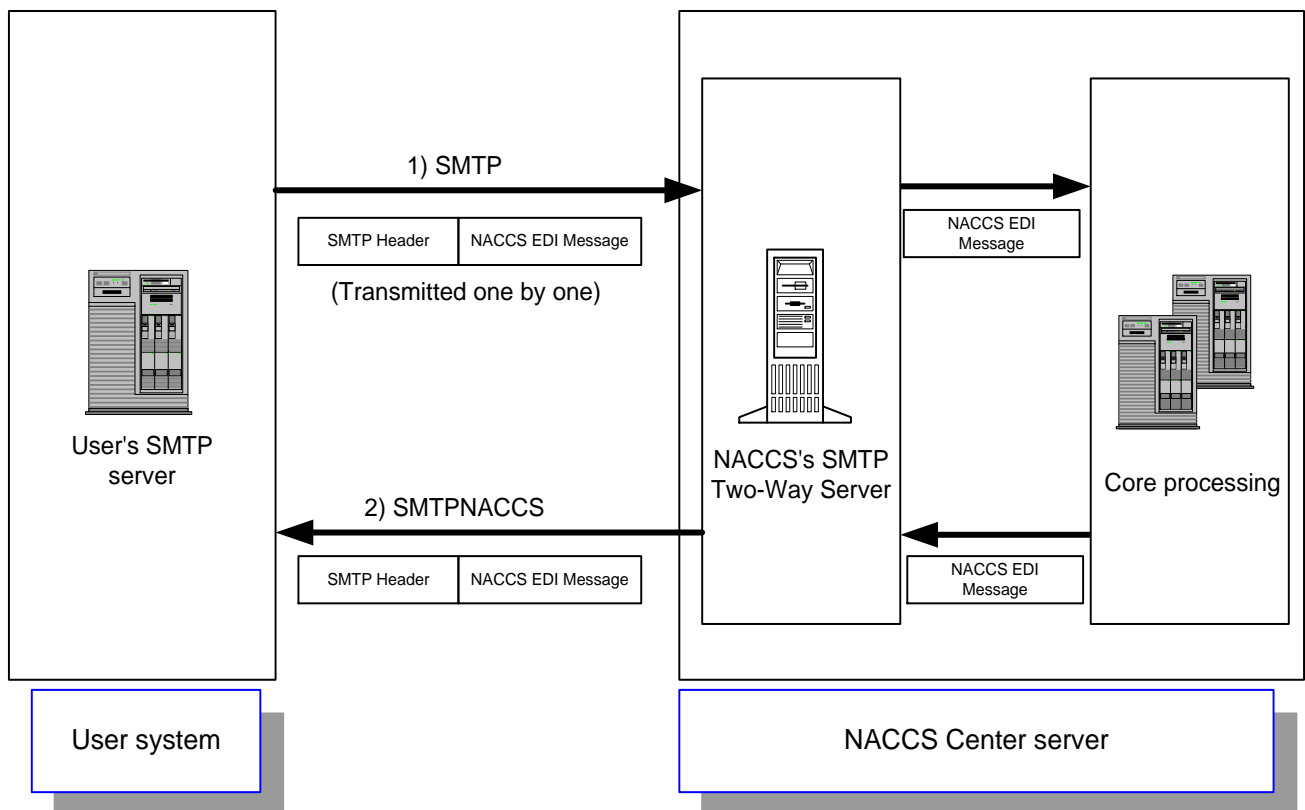

| SMTP Header | NACCS EDI Message |
| NACCS EDI Message |

1) SMTP

(Transmitted one by one)

2) SMTPNACCS

| SMTP Header | NACCS EDI Message |
| NACCS EDI Message |

User's SMTP server

NACCS's SMTP Two-Way Server

Core processing

User system

NACCS Center server

Figure 4.2.1 Process outline of the interactive processing mode (SMTP two-way)

1) A user creates and sends a NACCS EDI message that contains the necessary data segments for a transaction from the user's SMTP server to the NACCS's SMTP Two-Way Server over SMTP protocol.

2) The message transmitted to the NACCS's SMTP Two-Way Server is transferred to the Core processing system. The message is processed and a response message is sent to the NACCS's SMTP Two-Way Server once again. The NACCS's SMTP Two-Way Server sends the processing result message to the user's SMTP server. Therefore, the user's SMTP server should always be activated.

4.2.2　Interface that users should follow

Users are required to comply with a certain interface in the interactive processing mode. Through this interface, a user sends a processing request message originating from the user's e-mail address to the NACCS Center server. And the user must receive all processing result messages (a processing result notification message or an output information message) for the request before sending the next transaction request.
More specifically, the user sends a processing request message with a unique input message ID to the NACCS Center server. When the user receives all processing result messages corresponded to the processing request message (processing result notification message or output message) from NACCS Center server, the user checks that "the input message ID is the same value as specified in the corresponding request message", and send a subsequent transaction request message.

(Note 1) Value forwarding from a processing request message to its processing result message (background information of the above procedure)
Table 4.2.1 shows patterns of generating processing result messages which are output to the user system after a processing request message is sent from the user system to NACCS Center server and is processed at NACCS Center server. In all the patterns, a value specified in Input Message ID element in a request message is carried over to a processing result notification message or an output information message.
(See Table 3-5-2 "Correspondence of Input Message ID and Message Tag" for details on Input Message ID)

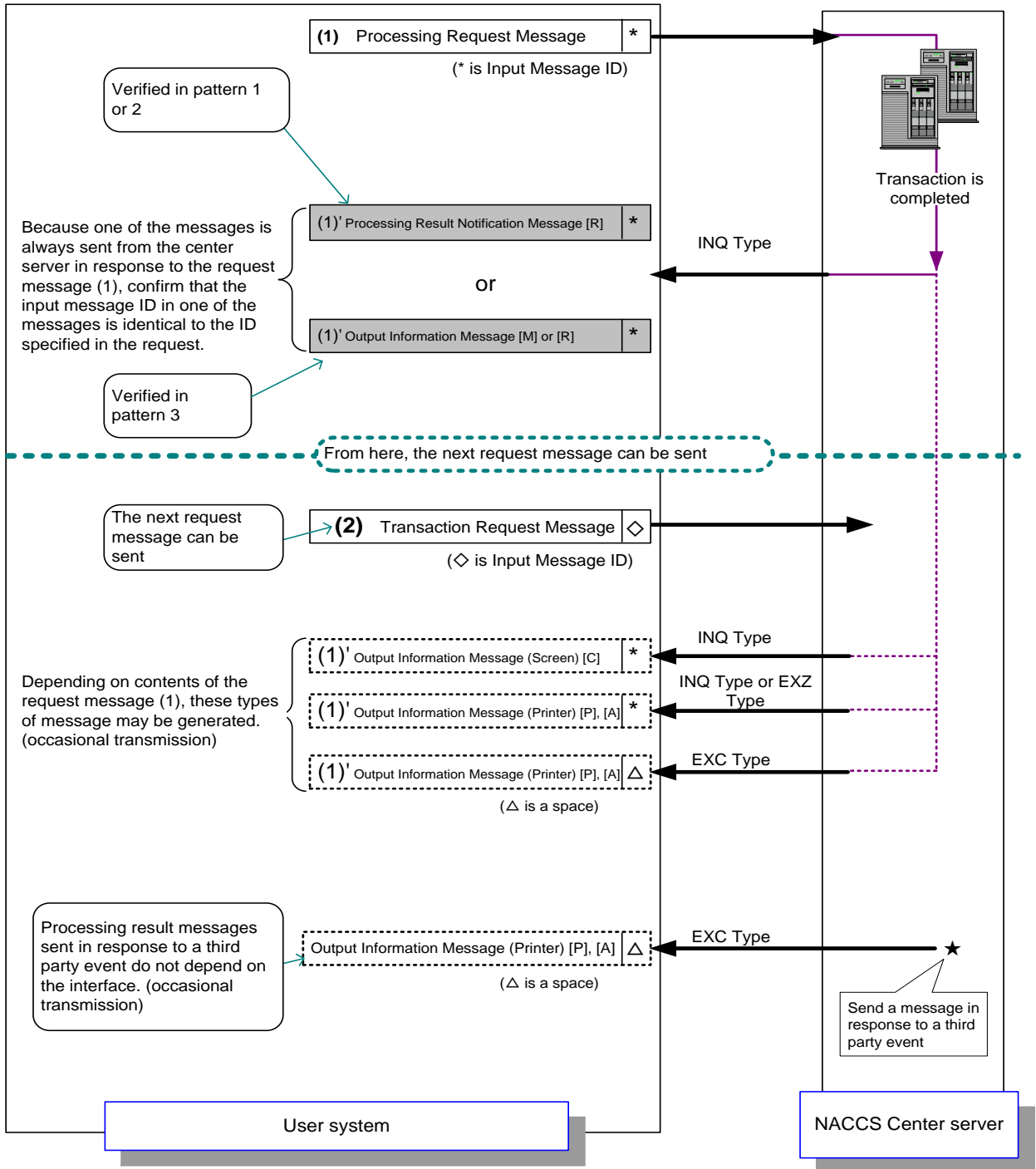Table 4-2-1 Value forwarding from a transaction request message to its processing result message

Pattern	Processing result message		Occurrence of Input Message ID Value Forwarding	Remarks
	Message Type			
1	Processing result notification message	[R]	○	Input Information ID in the processing result notification [R] is verified for correspondence check.
2	Processing result notification message	[R]	○	*1 Because EXC type output information message [P] and [A] do not forward Input Information ID (with exceptions in some kinds of output information message), Input Information ID in the Processing Result Notification [R] is verified for correspondence check.
	Output Information Message	[C] or [P], [A]	[C]: ○ [P], [A]: △ (*1)	
3	Output Information Message	[R] or [M]	○	Because processing result notification messages are not generated in the query process, Input Information ID in the output information message is verified for the correspondence check.

(Note 2) Implication in "3.5.3 Continued processing (Index tag)"
When executing a transaction for continued processing, the user system needs to implement an extra mechanism for continued processing in addition to the interface in the interactive processing mode, because in continued processing a value specified in Message Tag in the output information message sent from the NACCS Center server needs to be carried over to the next transaction request at the user system without any change.
See "3.5.3 Continued processing (Index Tag)" and Appendix Table 6.8 "Output information code List: continued processing" for details.

Figure 4.2.2 shows an image of the interface of the Interactive Processing Mode (SMTP two-way).

(1) Processing Request Message   *
(* is Input Message ID)

Verified in pattern 1 or 2

Because one of the messages is always sent from the center server in response to the request message (1), confirm that the input message ID in one of the messages is identical to the ID specified in the request.

(1)' Processing Result Notification Message [R]   *

or

(1)' Output Information Message [M] or [R]   *

Verified in pattern 3

Transaction is completed

INQ Type

From here, the next request message can be sent

The next request message can be sent

(2) Transaction Request Message ◇
(◇ is Input Message ID)

Depending on contents of the request message (1), these types of message may be generated. (occasional transmission)

(1)' Output Information Message (Screen) [C]   *
INQ Type

(1)' Output Information Message (Printer) [P], [A]   *
INQ Type or EXZ Type

(1)' Output Information Message (Printer) [P], [A] △
EXC Type
(△ is a space)

Processing result messages sent in response to a third party event do not depend on the interface. (occasional transmission)

Output Information Message (Printer) [P], [A] △
EXC Type
(△ is a space)

Send a message in response to a third party event

User system

NACCS Center server

* Refer to Table 4.2.1 the patterns "pattern 1" through "pattern 3" described in the figure.
* Refer to "3.5 Message Control Items" for information output in Input Message ID.

Figure 4.2.2 Example Usage of the Interface of the Interactive Processing Mode (SMTP Two-Way)

4.2.3　Details of the communications protocol

In the NACCS interactive processing mode (SMTP two-way), TCP/IP on the network and transport layers and SMTP on the upper layers are used as communications protocols.

(1) SMTP specifications when sending a processing request message on SMTP

(A) Applicable SMTP commands

SMTP commands which can be used when sending a processing request message to the NACCS Center server in the interactive processing mode (SMTP two-way) are listed in Table 4.2.2.

Table 4.2.2 SMTP Command List (When the Processing Request Message is sent)

Command	Outline	Parameter	Response from NACCS's SMTP Two-Way Server to user's SMTP server (Normal response)
HELO	To declare use of the communications channel and identify the host	Sender host name (Domain name)	250
MAIL	To start the mailing transaction	FROM: Sender name	250
RCPT	To specify the receiver of the mail	TO: Receiver user name	250
DATA	To start sending the mail body	Message data	354
RSET	To stop sending the mail	None	250
QUIT	To close the connection	None	221

(B)   Command sequence in Transmission of Processing Request Message over SMTP

Figure 4.2.3 shows a sequence of SMTP commands issued during transmission of a transaction request message from a user's SMTP server to the NACCS's SMTP Two-Way Server. In addition, Table 4.2.3 shows description of each command.
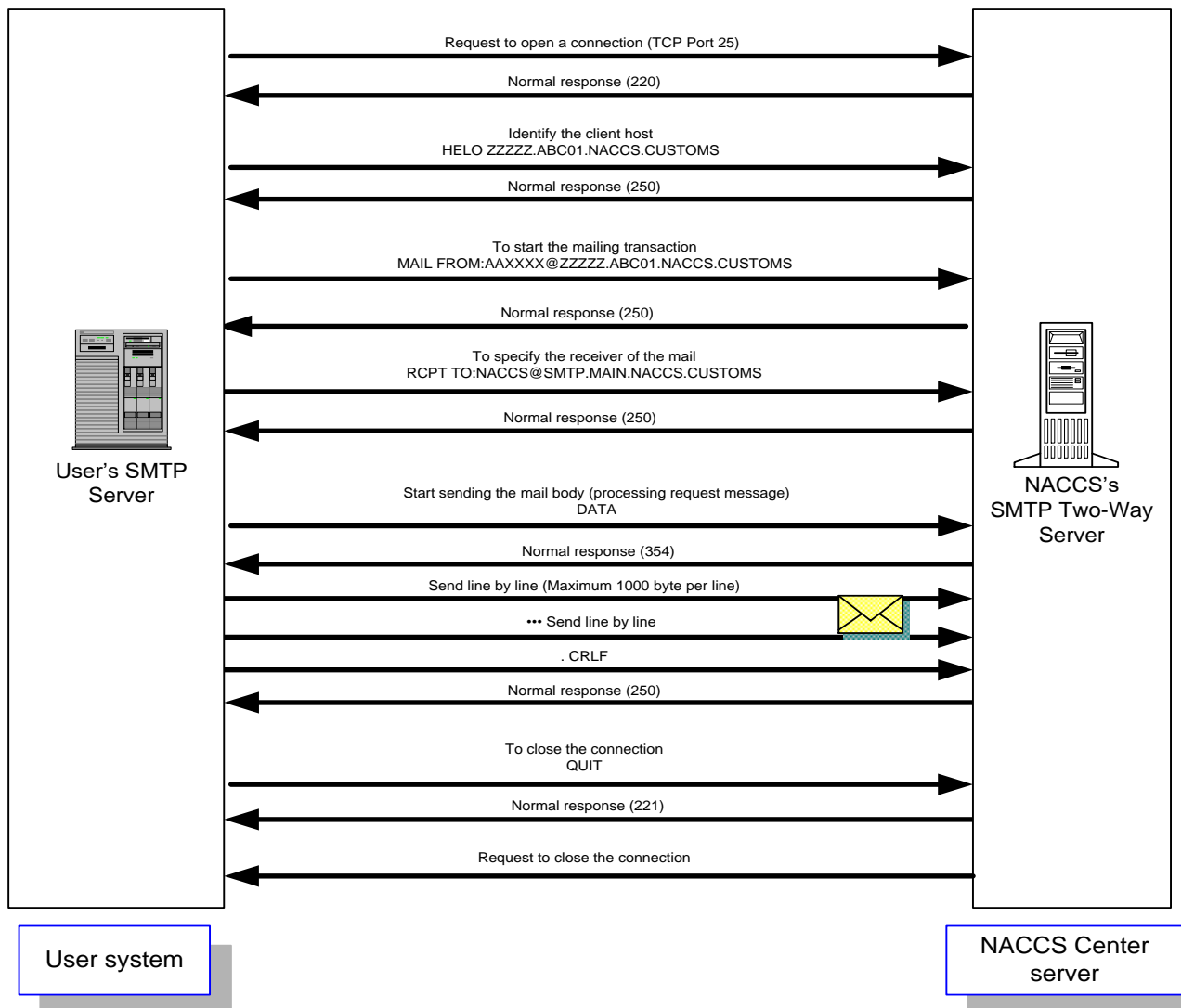

Figure 4.2.3 SMTP Command Sequence on Transmission of a Transaction Request Message

(Note) A user of the interactive processing mode (SMTP two-way) needs to issue a QUIT command after completing transmission of the entire message text when sending processing request messages. If the user's SMTP server does not issue a QUIT command within one hour after the completion of a message transmission, the NACCS's SMTP Two-Way server declares a connection timeout and closes the current connection by force.

Table 4.2.3 SMTP Command List (When the Processing Request Message is sent)

Item No.	Command	Description
1	Request to open a connection	User's SMTP server requests to open a connection toward port number 25 of NACCS's SMTP Two-Way Server. NACCS's SMTP Two-Way Server sends back the response code 220 as a normal response. NACCS center notifies the IP address of NACCS's SMTP Two-Way Server in advance.
2	HELO Domain name	User's SMTP server specifies domain name of user and executes the command. If the server can be used, NACCS's SMTP Two-Way Server will open a connection. NACCS's SMTP Two-Way Server sends back the response code 250 as a normal response. NACCS center notifies user's domain name in advance.
3	MAIL FROM: Mail address	User's SMTP server specifies user's mail address and executes the commands. NACCS's SMTP Two-Way Server sends back the response code 250 as a normal response. NACCS center notifies user's mail address in advance.
4	RCPT TO: Mail address	User's SMTP server specifies NACCS Center server's mail address (NACCS@SMTP.PROD.NACCS6) and executes the command. NACCS's SMTP Two-Way Server sends back the response code 250 as a normal response.
5	DATA	User's SMTP server executes starting command to send processing request message. NACCS's SMTP Two-Way Server sends back the response code 354 as a normal response. After that, user's SMTP server can send the message (including communications protocol header).
6	Send mail body	User's SMTP server sends processing request message following NACCS procedure specification. At the end edge of a processing request message, only the line with dot (.) can be sent. After receiving the end edge, NACCS's SMTP Two-Way Server sends back the response code 250 as a normal response. (Note 1) When sending a processing request message, because the mapping of the processing result message is needed, it is necessary to refer to "4.2.2: Interface of the interactive processing mode that users should follow". (Note 2) It is necessary to make a line <CRLF> after each 1,000 bytes, but because in NACCS EDI specification, a new line <CRLF> will be made within 1,000 bytes, it is not necessary for the user to be aware of it. (Note 3) In SMTP, because the end edge of a message is recognized with <CRLF>.<CRLF>, if there is a line in which "." is placed in front in the middle of the message, user's SMTP server will add a dummy "." in front. In NACCS's SMTP Two-Way Server, the dummy "." will be deleted and delivered to the Core processing system.

Item No.	Command	Description
7	RSET	If user executes this command, it will return to the status after HELO. NACCS's SMTP Two-Way Server sends back the response code 250 as a normal response. (Normally, it is not necessary to execute this command).
8	QUIT	User's SMTP server closes the SMTP connection. NACCS's SMTP Two-Way Server sends back the response code 221 as a normal response.

(Note 1) Response code of SMTP

There are optional characters behind 3 digits of each response code, but only refer to these 3 first digits.

Example: Response of HELO

<u>250</u> SMTP.PROD.NACCS6
↑

Only refer to the response code and carry out the settlement methods described in the Table 4.2.4.

* Reason: Because rear characters can be changed depending on Specification changes in the NACCS center server.

(Note 2) Timeout observation

Observe timeout of SMTP connection so that user's SMTP server can detect the failure of NACCS's SMTP Two-Way Server and network.

In this specification, more than one message can be sent in one connection, and as the timeout period of SMTP connection cannot be prescribed, the monitoring time must be decided based on operation methods applied by user.

(C) Settlement in abnormal cases

Settlement methods in case if an error occurs when sending SMTP are described in the Table 4.2.4.

Table 4.2.4 Settlement methods for sequential errors of SMTP

Item No.	Command	Estimated errors and settlement methods

1	Request to open a connection	NACCS's SMTP Two-Way Server sends a request to open a connection, however, the request is not accepted.
		Reasons and settlement methods:
		• The destination IP address is faulty.
		  → Determine if it is connected to the IP address of NACCS's SMTP Two-Way Server which NACCS Center has notified or not.
		• The destination port number is faulty.
		  → Determine if a request is sent to open a connection to port number 25 or not.
		• The NACCS Center server is under maintenance.
		  → Information about maintenance of the NACCS Center server is announced to the public on NACCS Information, so that should be checked. If the center is under maintenance, re-send the request to open a connection after the maintenance work is finished.
		• The NACCS Center server or network is damaged.
		  → Re-send another request to open a connection after a while. If it is not recovered for a long time, send an investigation request to the Help desk of NACCS Center.
		  The information on damages is also updated on the NACCS Information.
		The information on the server's maintenance or damages used for connection test will not be notified on the NACCS Information, if the server cannot be connected even in the time when the connection test is done, confirm the situation with NACCS Center.

2	HELO	Errors in response (except for normal responses (250)) are returned.
		Reasons and settlement methods:
		1. For syntax error (500)
		  → Confirm that the character string for sending the HELO command is correct.
		2. For command sequences error (503).
		  → Execute the command with the right sequences described in the Figure 4.2.3.
		
		Timeout due to no response from NACCS's SMTP Two-Way Server.
		Reasons and settlement methods:
		As damages may be occurring, cut off the connection for a while and re-send the request for a connection.

3	MAIL FROM	Errors in response (except for normal responses (250)) are returned.
		Reasons and settlement methods:
		1. For syntax error (500) or parameter error (501) or domain name error (553).
		  →Confirm that the character string for sending MAIL command is correct.
		2. For command sequences error (503).
		  → Execute the command with the right sequences described in the Figure 4.2.3.
		
		Timeout due to no response from NACCS's SMTP Two-Way Server.
		Reasons and settlement methods:
		As damages may be occurring, cut off the connection for a while and re-send the request for a connection.

Item No.	Command	Estimated errors and settlement methods

4	RCPT TO	Errors in response (except for normal responses (250)) are returned.
		Reasons and settlement methods:
		1. For syntax error (500) or parameter error (501) or domain name error (553).
		    → Confirm if the character string of sending RCPT command is right or not.
		2. For command sequences error (503).
		    → Execute the command with the right sequences described in the Figure 4.2.3.
		
		Timeout due to no response from NACCS's SMTP Two-Way Server.
		Reasons and settlement methods:
		As damages may be occurring, cut off the connection for a while and re-send the request for a connection.

5	DATA	Errors in response (except for normal responses (354)) are returned.
		Reasons and settlement methods:
		1. For syntax error (500)
		    → Confirm that character string of sending DATA command is correct.
		2. For command sequences error (503).
		    → Execute the command with the right sequences described in the Figure 4.2.3.
		
		Timeout due to no response from NACCS's SMTP Two-Way Server.
		Reasons and settlement methods:
		As damages may be occurring, cut off the connection for a while and re-send the request for a connection.

6	Send processing request message	Errors occur during communication. Reasons and settlement methods: As NACCS's SMTP Two-Way Server can be damaged, re-send the request after a short interval. If it is not recovered for a long time, send an investigation request to the Help desk of NACCS Center.
7	RSET	Errors in response (except for normal responses (250)) are returned. Reasons and settlement methods: For syntax error (500) → Confirm that character string of sending RSET command is correct. Timeout due to no response from NACCS's SMTP Two-Way Server. Reasons and settlement methods: As damages may be occurring, cut off the connection for a while and re-send the request for a connection.
8	QUIT	Errors in response (except for normal responses (221)) are returned. Reasons and settlement methods: For syntax error (500) → Confirm that the character string of sending QUIT command is correct.
9	Others	Detect abnormalities during communication. Reasons and settlement methods: As damages may be occurring, re-send the request to open a connection.

(2) SMTP specifications when receiving a processing result message on SMTP

(A) Applicable SMTP commands

Table 4.2.5 shows SMTP commands used by the NACCS's SMTP Two-Way Server and responses sent by the user's SMTP server in the interactive processing mode (SMTP two-way).

Table 4-2-5 SMTP Command List (When the Processing Request Message is received)

Command	Outline	Parameter	Response from user's SMTP server to NACCS's SMTP Two-Way Server (Normal response)
HELO	To declare use of the communications channel and identify the host	Sender host name (Domain name)	250
MAIL	To start the mailing transaction	FROM: Sender name	250
RCPT	To specify the receiver of the mail	TO: Receiver user name	250
DATA	To start sending the mail body	Message data	354
RSET	To stop sending the mail	None	250
QUIT	To close the connection	None	221

(B) SMTP command sequence for receiving a processing result message

Figure 4.2.4 shows a sequence of SMTP commands issued during transmission of a processing result message from the NACCS's SMTP Two-Way Server to a user's SMTP server. Table 4.2.6 shows description of each command.
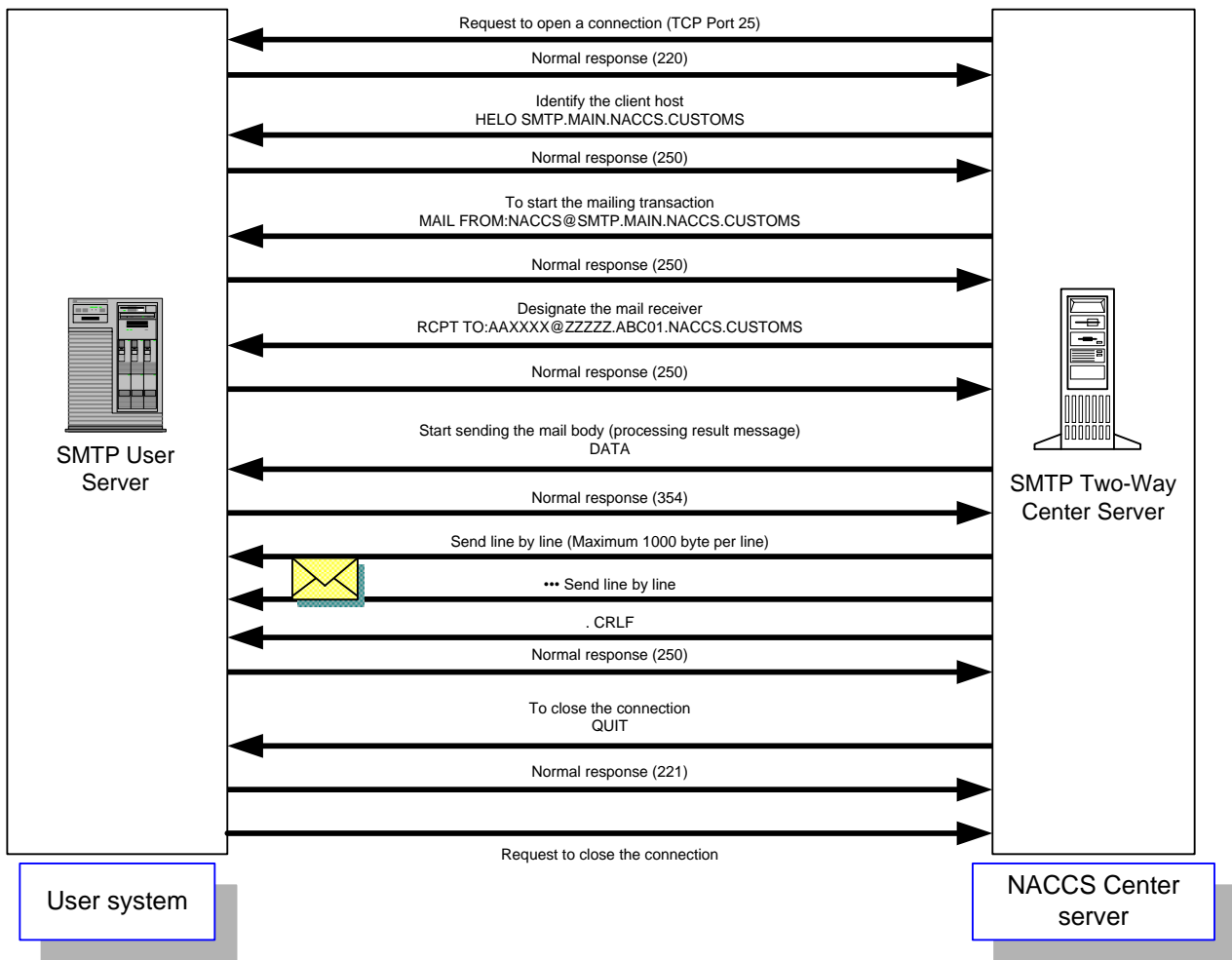

Figure 4.2.4 SMTP Command Sequence on Transmission of a Processing Result Message

When receiving a processing result message, the NACCS's SMTP Two-Way Server always issues a QUIT command to close the current connection after completing the transmission of a message to a user system. Only one message is transmitted during one connection.

Table 4.2.6 Description about Command when Receiving SMTP

Item No.	Command	Description
1	Request to open a connection	NACCS's SMTP Two-Way Server sends request to open a connection toward port number 25 of user's SMTP server. User's SMTP server sends back the response code 220 as a normal response.
2	HELO Domain name	NACCS's SMTP Two-Way Server specifies domain name as "SMTP.PROD.NACCS6" and executes the command. If the server can be used, the user's SMTP server will open a connection and send back the response code 250 as a normal response.
3	MAIL FROM: Mail address	NACCS's SMTP Two-Way Server specifies center's mail address (NACCS@SMTP.PROD.NACCS6) and executes the command. User's SMTP server sends back the response code 250 as a normal response.
4	RCPT TO: Mail address	NACCS's SMTP Two-Way Server specifies users' mail addresses and executes their commands. User's SMTP server sends back the response code 250 as a normal response.
5	DATA	NACCS's SMTP Two-Way Server executes a starting command to send processing result messages. User's SMTP server sends back the response code 354 as a normal response. After that, NACCS's SMTP Two-Way Server sends the message (including communications protocol header).
6	Send processing result message	NACCS's SMTP Two-Way Server sends processing result messages following NACCS procedure specification. After receiving the end edge, User's SMTP server sends back the response code 250 as a normal response. (Note) In SMTP, as the end edge of a message is recognized with <CRLF>.<CRLF>, if there is a line with only ".", NACCS's SMTP Two-Way Server will add a dummy "." in front of it. In User's SMTP server, the dummy "." will be deleted and delivered to the Main processor.
7	RSET	If the NACCS's SMTP Two-Way Server executes this command, it will return to the status after HELO. User's SMTP server sends back the response code 250 as a normal response. (Normally, it is not necessary to execute this command)
8	QUIT	NACCS's SMTP Two-Way Server closes the SMTP connection. User's SMTP server sends back the response code 221 as a normal response.

(Note 1) Timeout observation

Observe timeout from sending request to open a connection until QUIT command is finished so that NACCS's SMTP Two-Way Server can detect the failures of user's SMTP server and network. If the QUIT command is not finished in 3 minutes after request to open a connection has been sent, NACCS's SMTP Two-Way Server will recognize it as a timeout.

(C) Settlement in abnormal cases

If NACCS's SMTP Two-Way Server recognizes interferences such as unavailability of request to open a connection, errors of SMTP sequence or timeout, messages except for transaction output for printer will not be guaranteed.
If a transaction output for the printer cannot be sent normally, NACCS's SMTP Two-Way Server will store that transaction output in the Error message queue of the output message cache in the Center. The messages stored in the Error message queue can be retrieved if the user carries out the Error message retrieving procedure (SYG).

(Note) The Error message retrieving procedure (SYG), and guaranteed message type, etc. is mentioned in "3.7 Output message cache and retrieving procedure".

4.2.4 Message format

In the interactive processing mode (SMTP two-way), a communications protocol header and a trailer are added to a NACCS EDI message, an attachment file transmission message or a XML format message.

The message formats are outlined as follows:

(1) NACCS EDI message

Figure 4.2.5 shows outline of NACCS EDI message format (interactive processing mode (SMTP two-way)).

NACCS EDI message

Communications Protocol Header (SMTP Header)	Input (Output) Common Field	Procedure-By-Procedure Field	Communications Protocol Trailer (SMTP Trailer)

Max. 700,000 bytes (Note)

(Refer to "3 Message structure and format")

(Refer to "4.2.4 (4) Contents of the SMTP header (A) NACCS EDI message")

Subject

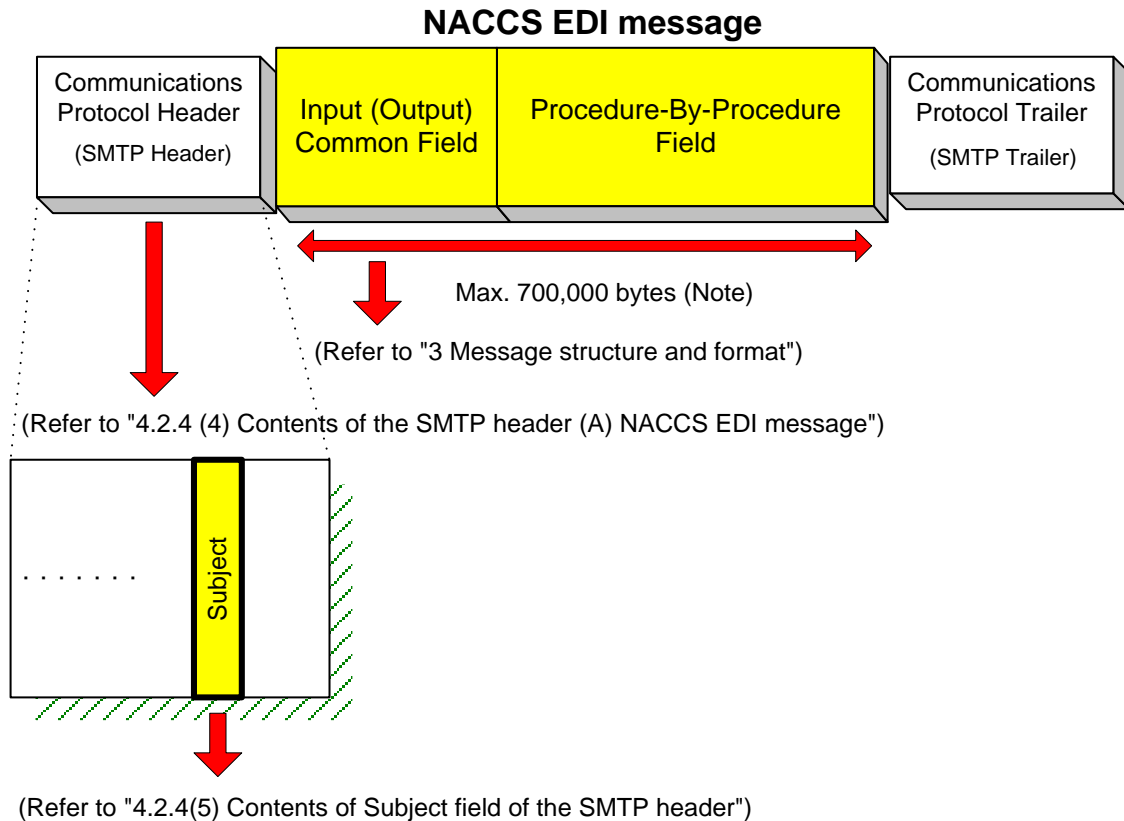(Refer to "4.2.4(5) Contents of Subject field of the SMTP header")

Figure 4.2.5 Outline of NACCS EDI Message Format (Interactive Processing Mode (SMTP Two-Way))

(Note) Refer to "3.1.2 NACCS EDI message format Table 3.1.1" for the maximum allowable message size transmitted among relevant ministers' system.

Figure 4.2.6 shows a layout of a NACCS EDI message sent to the NACCS center server from a user in the interactive processing mode (SMTP two-way).

(1) A NACCS EDI message body comes after the "<CRLF>" code placed after the SMTP header.
(2) "." (Period) and "<CRLF>" are placed after the NACCS EDI message body, as communications protocol trailer.
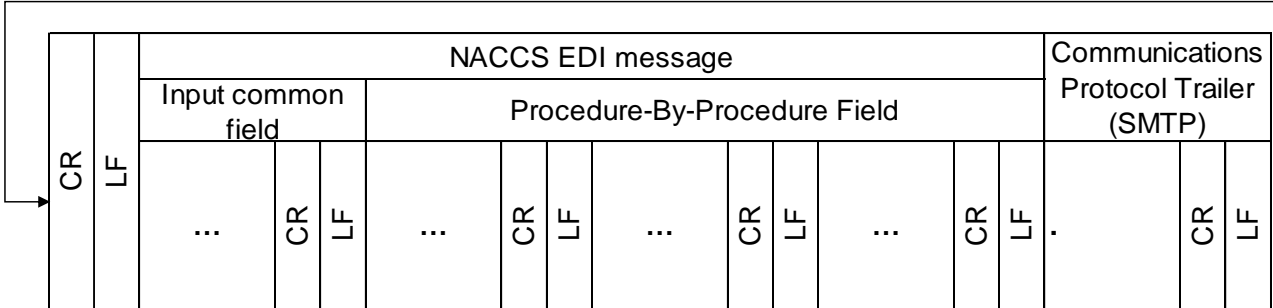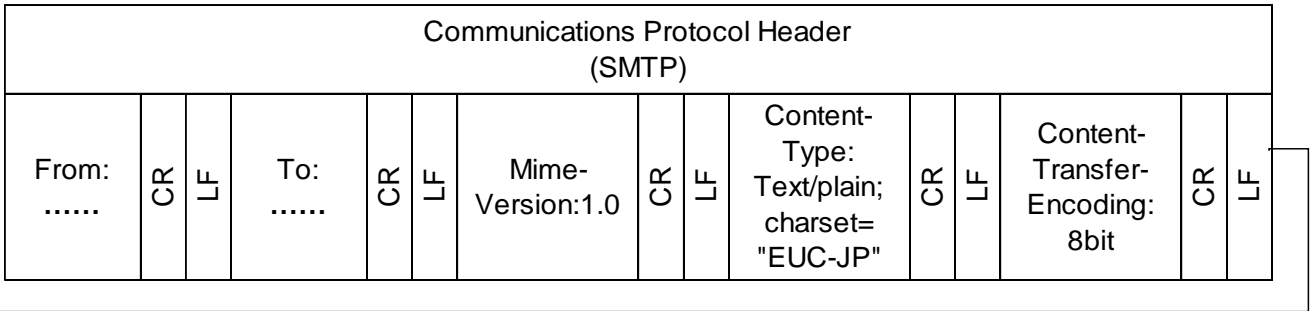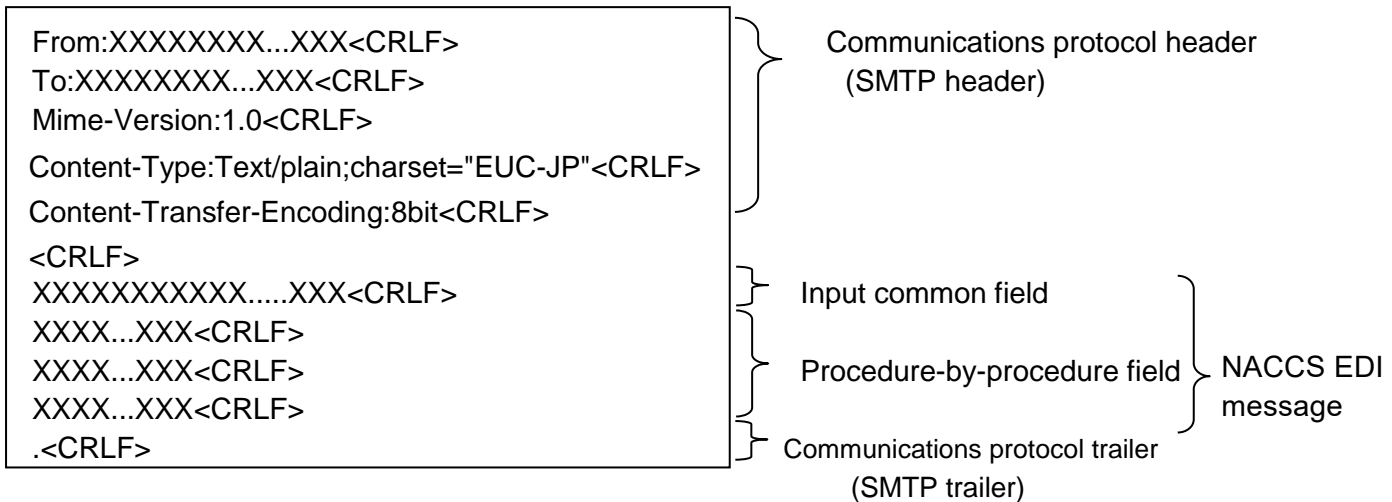
Figure 4.2.6 Message Layout shows a table-like diagram:

Communications Protocol Header (SMTP)															
From:	CR	LF	To:	CR	LF	Mime-Version:1.0	CR	LF	Content-Type: Text/plain; charset= "EUC-JP"	CR	LF	Content-Transfer-Encoding: 8bit	CR	LF	

		NACCS EDI message											Communications Protocol Trailer (SMTP)		
		Input common field			Procedure-By-Procedure Field										
CR	LF	...	CR	LF	...	CR	LF	...	CR	LF	...	CR	LF	.	CR	LF

Figure 4.2.6 Message Layout

Note: The following figure shows segments of a message displayed on text editor tools, etc.

```
From:XXXXXXXX...XXX<CRLF>
To:XXXXXXXX...XXX<CRLF>
Mime-Version:1.0<CRLF>
Content-Type:Text/plain;charset="EUC-JP"<CRLF>
Content-Transfer-Encoding:8bit<CRLF>
<CRLF>
XXXXXXXXXXX.....XXX<CRLF>
XXXX...XXX<CRLF>
XXXX...XXX<CRLF>
XXXX...XXX<CRLF>
.<CRLF>
```

Communications protocol header (SMTP header)

Input common field

Procedure-by-procedure field

NACCS EDI message

Communications protocol trailer (SMTP trailer)

(Note) Appearance of <CRLF> may be different depending on text editors, etc.

⚠ Communications protocol trailer

In SMTP, a line containing ". <CRLF>" (a period line) is added to the end of the massage. Termination of the message is recognized by the sequence of "<CRLF>. <CRLF>", which is the combination of "<CRLF>", placed at the last message body and this additional period line.

⚠ How to distinguish between communications protocol trailer and "." (dot)

"." is communications protocol trailer which describes the end edge of the response. In SMTP, the end edge of a message is recognized with <CRLF>.<CRLF>. If there is a message in which "." is placed in front of the line, in order to distinguish with the communications protocol trailer, the Center will add "." (Byte stuff) in front of the line and send it back to user. In case if the arrival response message has a "." in front of the line and the next character string is not <CRLF>, user will delete "." (Byte stuffing) in front of the line. Failure to delete byte stuff causes errors such as messages containing an additional unwanted "." (dot) and messages with an extra byte at the user's system.

(2) Attachment file transmission message

Figure 4.2.7 shows outline of attachment file transmission message (interactive processing mode (SMTP two-way)).
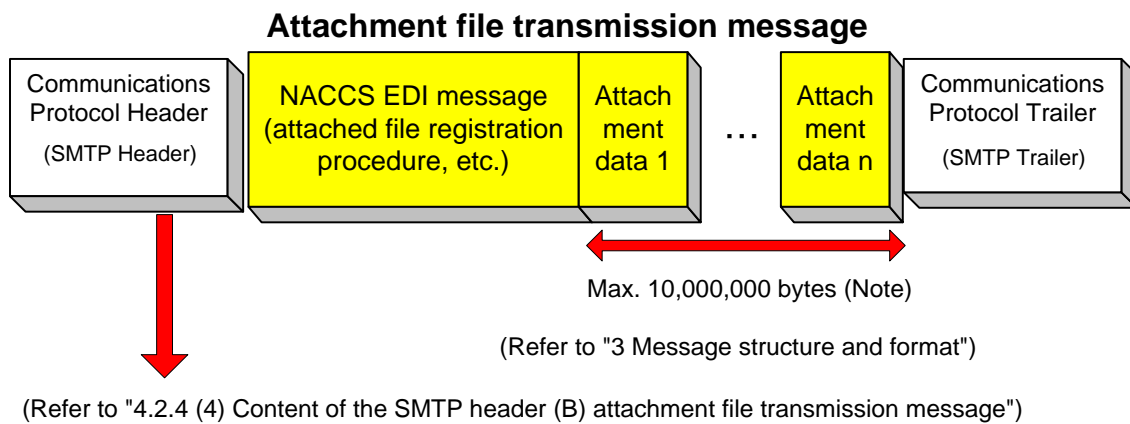Refer to "4.6.2 Attachment file" for attachment files available for NACCS.

Attachment file transmission message

Max. 10,000,000 bytes (Note)

(Refer to "3 Message structure and format")

(Refer to "4.2.4 (4) Content of the SMTP header (B) attachment file transmission message")

Figure 4.2.7 Outline of Attachment File Transmission Message Format (Interactive Processing Mode (SMTP Two-Way))

(Note)   Refer to "3.1.2 NACCS EDI message format Table 3.1.1" for maximum allowable attachment data size transmitted among relevant ministers' system.

Figure 4.2.8 shows a layout of an attachment file transmission message sent to NACCS center server from a user in the interactive processing mode (SMTP two-way).
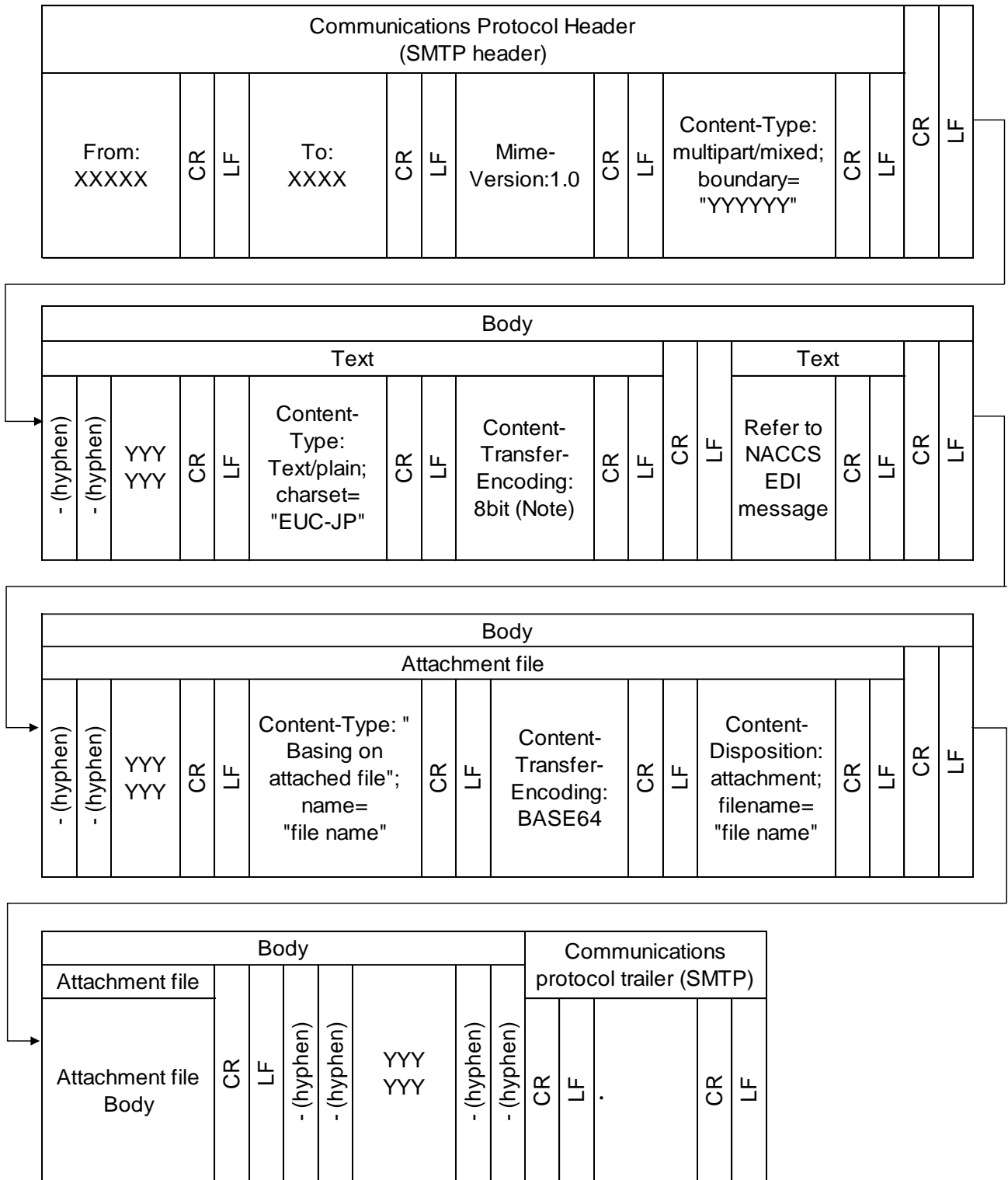(1)   Filing method
 In NACCS, BASE64 of MIME (Multipurpose Internet Mail Extensions) is used when sending and receiving the message. Attachment file transmission message is stored in the attached file format.
 Details of regulations when sending and receiving the attachment file transmission message is as follows.

   • MIME version is 1.0.
   • The Content-type of the SMTP header is Multipart/mixed, the Content-type of the NACCS message is Text/plain, the Content-type of the attached file is specified according to each attached file.
   • The Content-Transfer-Encoding of the attached file is appointed as BASE64.
   • NACCS EDI message can't be abbreviated. In addition, the attached file needs to be placed behind the NACCS EDI message.
   • In Content-Disposition, specify the "attachment" and specify the file's name in "filename".

 (2) Image of message
   • The attachment file transmission message is structured with a communications protocol header, and a message and communications protocol trailer.
   • NACCS EDI message, attached file's body encoded with BASE64 comes after the <CRLF> code placed after SMTP header.
   • <CRLF>, "."(period), and <CRLF> are placed after the attachment file transmission message as the communications protocol trailer.

Communications Protocol Header (SMTP header)											
From: XXXXX	CR	LF	To: XXXX	CR	LF	Mime-Version:1.0	CR	LF	Content-Type: multipart/mixed; boundary= "YYYYYY"	CR	LF	CR	LF

Body													
Text										Text			
- (hyphen)	- (hyphen)	YYY YYY	CR	LF	Content-Type: Text/plain; charset= "EUC-JP"	CR	LF	Content-Transfer-Encoding: 8bit (Note)	CR	LF	CR	LF	Refer to NACCS EDI message	CR	LF	CR	LF

Body												
Attachment file												
- (hyphen)	- (hyphen)	YYY YYY	CR	LF	Content-Type: " Basing on attached file"; name= "file name"	CR	LF	Content-Transfer-Encoding: BASE64	CR	LF	Content-Disposition: attachment; filename= "file name"	CR	LF	CR	LF

Body									Communications protocol trailer (SMTP)		
Attachment file											
Attachment file Body	CR	LF	- (hyphen)	- (hyphen)	YYY YYY	- (hyphen)	- (hyphen)	CR	LF	.	CR	LF

(Note) Setting point of this item is based on email software.   "8 bit" is just an example.

Figure 4.2.8 Example of Attachment File Transmission Message Structure

Note:
  Text presentation of the above contents on text editor tools, etc. is described as follow.

From:XXXXX…XXX<CRLF>   Communications protocol
To:XXXXX…XXX<CRLF>   header
Mime-Version:1.0<CRLF>   (SMTP header)
Content-Type:multipart/mixed; boundary="YYYYYY"<CRLF>
<CRLF>
--YYYYYY<CRLF>
Content-Type:Text/plain; charset="EUC-JP"<CRLF>
Content-Transfer-Encoding:8bit<CRLF>
<CRLF>
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX...XXX <CRLF> NACCS EDI message
<CRLF>
--YYYYYY<CRLF>
Content-Type: "Basing on attached file"; name="file name"<CRLF>
Content-Transfer-Encoding:BASE64<CRLF>
Content-Disposition: attachment; filename="file name"<CRLF>   Repeatable
<CRLF>
ZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZ...ZZ   Attached file's body
<CRLF>
--YYYYYY--
<CRLF>   Communications protocol
.<CRLF>   trailer
                                                        (SMTP trailer)

(3)　XML format message

Figure 4.2.9 shows outline of XML format message format (interactive processing mode (SMTP two-way)).
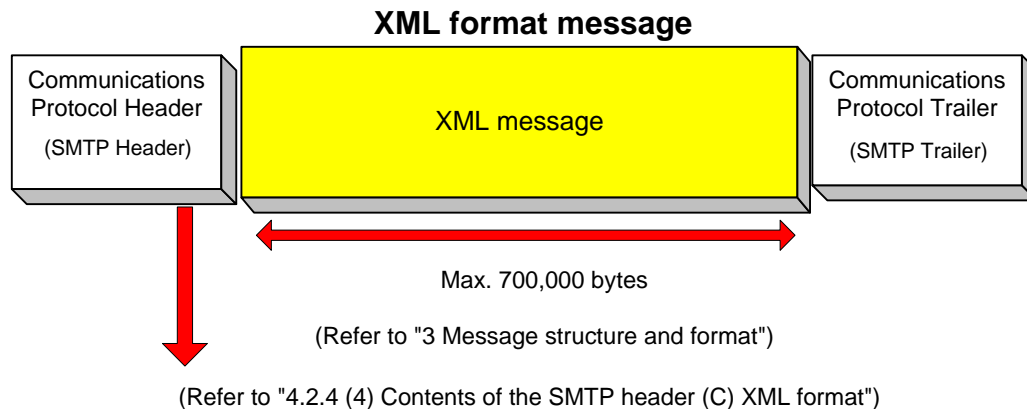
XML format message

Figure 4.2.9 XML Format Message (Interactive Processing Mode (SMTP Two-Way))

Lay out of an XML format message sent to NACCS Center server from a user in the interactive processing mode is described as follow.

(1) An XML format message body comes after the "<CRLF>" code placed after the SMTP header.
(2) <CRLF>, "." (period) and <CRLF> are placed after the XML format message as communications protocol trailer.
(3) Make a new line after each 1,000 bytes. If not, an error will occur.
(4) <CRLF> exists in each line of XML message.
(5) Character code of XML message is EUC-JP, EUC-JP must be recorded in encoding field of XML header.

For details of XML format message structure which user sends to NACCS center sever in interactive processing mode (SMTP two-way), refer to Appendix 15 and Procedure Specifications.

Note:
   Text presentation of the above contents on text editor tools, etc. is described as follow.

From:XXXXX…XXX\<CRLF\>   Communications protocol
To:XXXXX…XXX\<CRLF\>   header
Mime-Version:1.0\<CRLF\>   (SMTP header)
Content-Type:Text/xml; charset="EUC-JP"\<CRLF\>
Content-Transfer-Encoding:8bit\<CRLF\>
\<CRLF\>

```
<?xml version="1.0" encoding="EUC-JP" standalone="no" ?>
• <RootElement>
   • <Header>
      • <DocumentType>
          <DocumentTypeCode>XXX</DocumentTypeCode>
          <DocumentTypeDescription>XX…XXX</DocumentTypeDescription>
      </DocumentType>
      • <DocumentIdentification>
          <MessageFunction> XX…XXX </MessageFunction>
          <MessageTransferSequenceNo>XX</MessageTransferSequenceNo>
      </DocumentIdentification>
      <SenderID> XX…XXX </SenderID>
   </Header>
   - <Body>
                 •          ┌─────────────────────────────────┐
                 •          │ * XML message                   │
                 •          │ Refer to Appendix 15 and Procedure │
                 •          │ Specifications for more details.│
                 •          └─────────────────────────────────┘

      • <AdditionalInformation>
          <InformationType> XX…XXX </InformationType>
      </AdditionalInformation>
   </Body>
 </RootElement>
```

\<CRLF\>   Communications protocol
.\<CRLF\>   trailer
                                                                 (SMTP trailer)

(4) Contents of the SMTP header

(A) NACCS EDI message

Contents of the SMTP header included in processing requests or processing result messages are as follows.

(1)   Processing request message
Table 4.2.7 shows the contents of the SMTP header in a processing request message sent from a user.

Table 4.2.7 SMTP header (processing request message)

Item No.	Item	Contents specified by the user
1	From	The sender of the mail. In NACCS a source (user) e-mail address assigned by NACCS Center is specified. If no address is specified, an error occurs. (See "4.2.4 (6) E-mail address used in the interactive processing mode (SMTP two-way)")
2	To	The receiver of the mail. In NACCS the NACCS Center server's e-mail address allocated for the interactive processing mode (SMTP two-way) is specified. (See "4.2.4 (6) E-mail address used in the interactive processing mode (SMTP two-way)")
3	MIME-version	In NACCS 1.0 is specified.
4	Content-Type	Text/plain;charset="EUC-JP" is specified.
5	Content-Transfer-Encoding	In NACCS characters are treated as EUC characters. 8bit is specified.

(2)   Processing result message
Table 4.2.8 shows contents of the SMTP header in a processing result message (processing result notification message and output information message) sent from NACCS to a user.

Table 4-2-8 SMTP header (processing result message)

Item No.	Item	Contents specified by the SMTP two-way NACCS center server
1	From	The sender of the mail. In NACCS, the NACCS Center server's e-mail address allocated for the interactive processing mode (SMTP two-way) is specified. (See "4.2.4 (6) E-mail address used in the interactive processing mode (SMTP two-way)")
2	To	The receiver of the mail. In NACCS user's e-mail address used to store processing result messages is specified. (See "4.2.4 (6) E-mail address used in the interactive processing mode (SMTP two-way)")
3	Date	The date the message is sent to the receiver is specified.
4	Subject	(See "4.2.4 (5) Contents of Subject field of the SMTP header")
5	MIME-version	In NACCS 1.0 is specified.
6	Content-Type	Text/plain;charset="EUC-JP" is specified.
7	Content-Transfer-Encoding	In NACCS characters are treated as EUC characters. 8bit is specified.

(B) Attachment file transmission message

Contents of the SMTP header included in processing request message and processing result message are as follows.

(1) Processing request message

Table 4.2.9 shows contents of the SMTP header in a processing request message sent from a user.

Table 4.2.9 SMTP Header (Processing Request Message)

Item No.	Item	Contents specified by the user
1	From	The sender of the mail. In NACCS, a source (user) e-mail address assigned by NACCS center is specified. If no address is specified, error will occur. (See "4.2.4 (6) E-mail address used in the interactive processing mode (SMTP two-way)")
2	To	The receiver of the mail. In NACCS, the NACCS Center server's e-mail address allocated for the interactive processing mode (SMTP two-way) is specified. (See "4.2.4 (6) E-mail address used in the interactive processing mode (SMTP two-way)")
3	MIME-version	In NACCS 1.0 is specified. If it is not specified, that e-mail will be omitted.
4	Content-Type	multipart/mixed; boundary="optional value" is specified as multipart type. If it is not specified, that e-mail will be omitted.
5	Content-Transfer-Encoding	It is not specified in SMTP header. 8bit is specified in NACCS message and BASE64 is specified in attached file.
6	Content-Disposition	It is not specified in SMTP header and NACCS message. Attachment is specified in attached file and "file name" in filename.

(2) Processing result message

For details about contents of the SMTP header in a processing result message sent from NACCS to a user, refer to "4.2.4 (4) Content of the SMTP header (A) NACCS EDI message – Table 4.2.7" above.

(C) XML format message

Contents of the SMTP header included in processing request message and processing result message are as follows.

(1)   Processing request message
Table 4.2.10 shows contents of the SMTP header in a processing request message sent from a user.

Table 4-2-10 SMTP Header (Processing Request Message)

Item No.	Item	Contents specified by the user
1	From	The sender of the mail. In NACCS, a source (user) e-mail address assigned by NACCS center is specified. If no address is specified, error will occur. (See "4.2.4 (6) E-mail address used in the interactive processing mode (SMTP two-way)")
2	To	The receiver of the mail. In NACCS, the NACCS center server's e-mail address allocated for the interactive processing mode (SMTP two-way) is specified. (See "4.2.4 (6) E-mail address used in the interactive processing mode (SMTP two-way)")
3	MIME-version	In NACCS 1.0 is specified. If it is not specified, that e-mail will be omitted.
4	Content-Type	In NACCS, due to using message in EUC, Text/xml; charset="EUC-JP" is specified.
5	Content-Transfer-Encoding	In NACCS characters are treated as EUC characters. 8bit is specified.

(2) Processing result message
For details about contents of the SMTP header in a processing result message sent from NACCS to a user, refer to "4.2.4 (4) Content of the SMTP header (A) NACCS EDI message – Table 4.2.7" above.

(5) Contents of the Subject field of the SMTP header

The contents of the Subject field of the SMTP header included in a processing result message sent from the NACCS center server to a user are as follows.

(1) Contents of Subject field
A common format is used for both processing result notification messages and output information messages.
Table 4.2.11 shows contents of Subject field.

Table 4.2.11 Contents of Subject Field

Field name	length	Outline
Procedure-By-Procedure Field Data	64	For example, procedure code, processing result code, declaration number, AWB number are specified. A one-byte space is used as a data separator.

(2) Remark
Since contents of Subject field are included in a NACCS EDI message body, Subject field is not specifically useful for users who do not need to handle its contents.
(Subject field can be omitted)

(6) E-mail address used in the interactive processing mode (SMTP two-way)

(A) Outline of e-mail address and address allocation guideline

Figure 4.2.10 shows an example e-mail addresses specified in the SMTP headers enclosed in processing request and processing result messages. User's e-mail address is specified in From field of "1) processing request message" and To field of "2) processing result message". NACCS Center server's e-mail address is specified in the To field of "1) processing request message" and the From field of "2) processing result message."
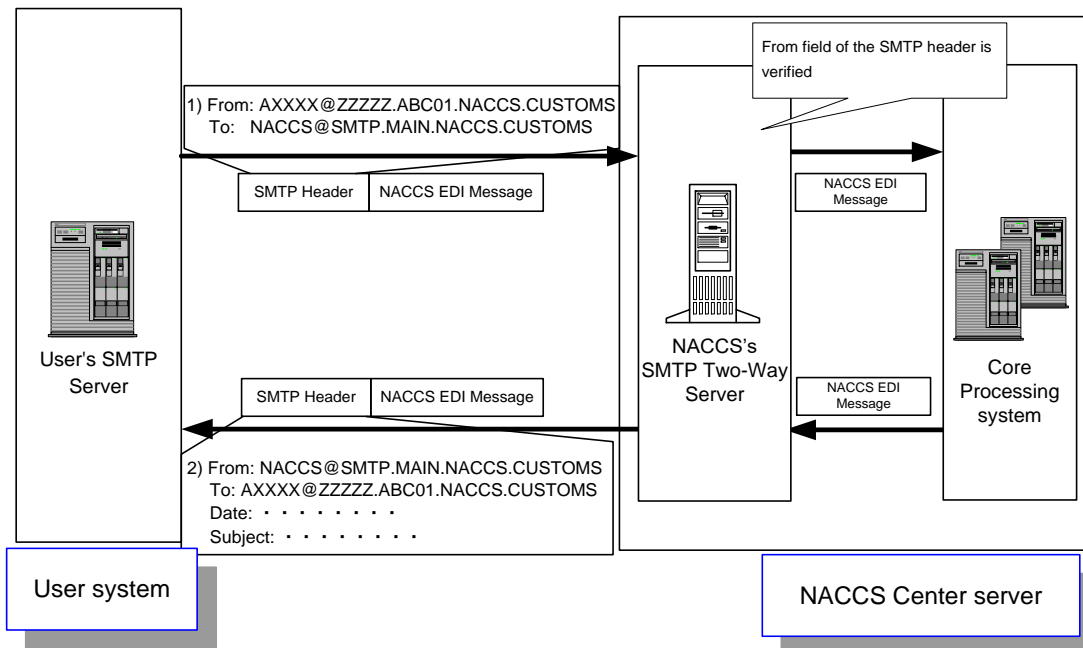
Figure 4.2.10 Usage of E-Mail Addresses in the SMTP Header

(B) User e-mail address format

Figure 4.2.11 shows the format of user e-mail addresses used in the interactive processing mode (SMTP two-way).
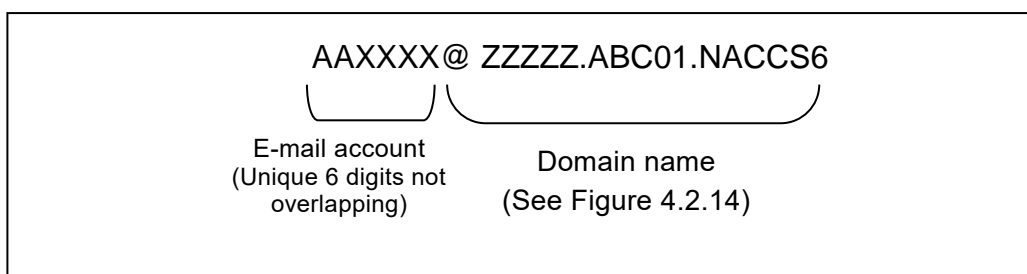
Figure 4.2.11 User E-mail Address Format in the Interactive Processing Mode (SMTP Two-Way) (in Single-Byte Capital Letters)

Since NACCS Center allocates an e-mail address to each user for the interactive processing mode (SMTP two-way), users are not allowed to choose their own e-mail address.

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(C) NACCS Center server e-mail address format

Figure 4.2.12 shows the format of the NACCS center server e-mail address used in the interactive processing mode (SMTP two-way).

NACCS @ SMTP.PROD.NACCS6
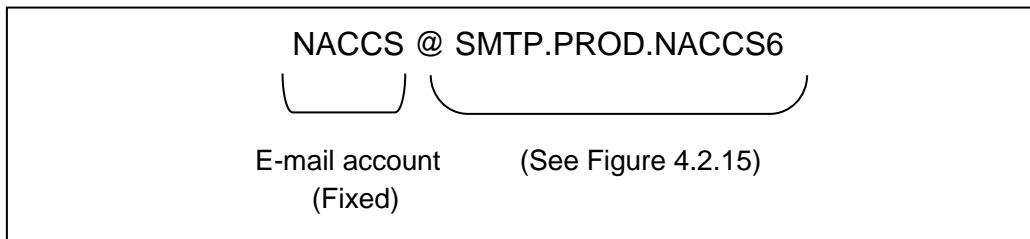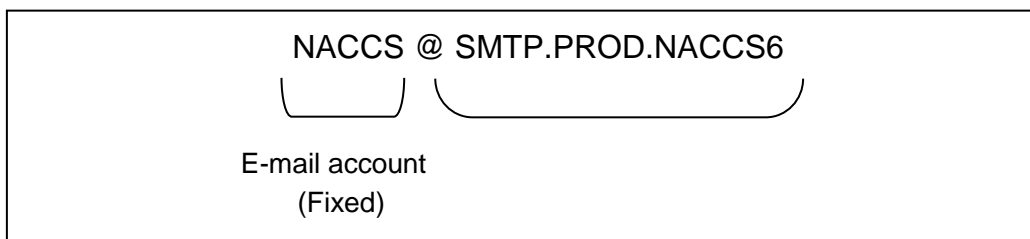
E-mail account   (See Figure 4.2.15)
(Fixed)

Figure 4.2.12 NACCS Center Server E-Mail Address Format in the Interactive Processing Mode (SMTP Two-Way) (in Single-Byte Capital Letters)

Moreover, the main center and the backup center can be switched by changing the DNS server data in NACCS Center. As a result, the user does not need to recognize the NACCS server's mail address when the backup center is operated.
In addition, Figure 4.2.13 shows examples of NACCS Center server mail addresses when there is a switch over to the backup center when a disaster, etc. occurs at the main center.

NACCS @ SMTP.PROD.NACCS6

E-mail account
(Fixed)

Figure 4.2.13 Backup NACCS Center Server E-Mail Address Format in the Interactive Processing Mode (SMTP Two-Way) (in Single-Byte Capital Letters)

(D) User domain name format

The format of user domain names used in the interactive processing mode (SMTP two-way) is described in Figure 4.2.14.

ZZZZZ.ABC01.NACCS6

User side   (Fixed)
SMTP server
Host name

User domain name
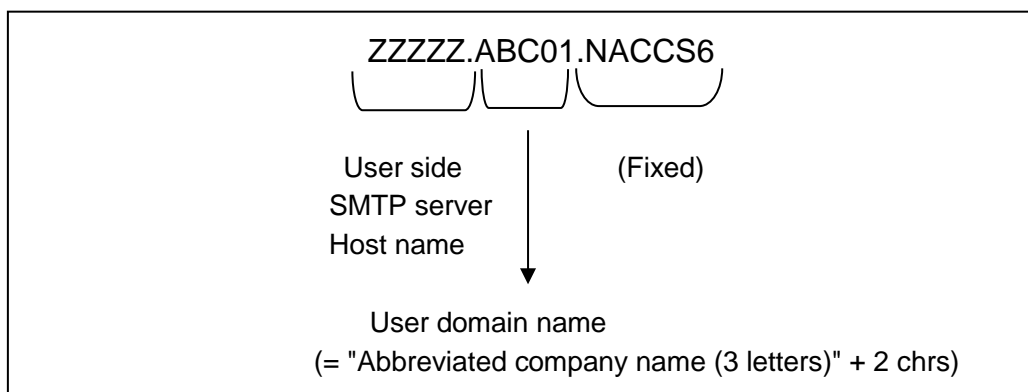(= "Abbreviated company name (3 letters)" + 2 chrs)

Figure 4.2.14 User Domain Name Format in the Interactive Processing Mode (SMTP Two-Way) (in Single-Byte Capital Letters)

(E)　NACCS Center server domain name

The format of the NACCS Center server domain name used in the interactive processing mode (SMTP two-way) is described in Figure 4.2.15.

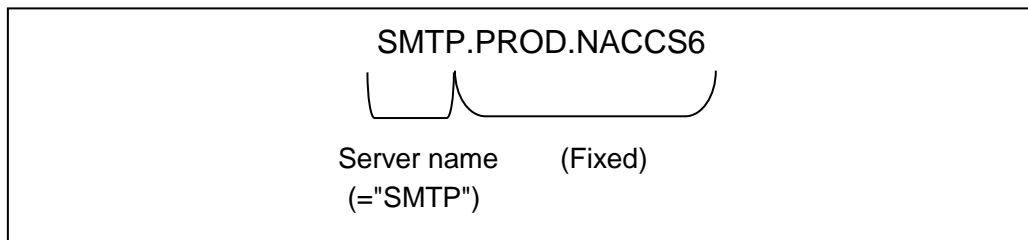SMTP.PROD.NACCS6

Server name　　(Fixed)
(="SMTP")

Figure 4.2.15 NACCS Center Server Domain Name Format in the Interactive Processing Mode (SMTP Two-Way) (in Single-Byte Capital Letters)

(F)　E-mail address used in a message sent from a user

E-mail addresses in the From and To fields of the SMTP header in a processing request message sent from a user to the NACCS's SMTP Two-Way Server are specified as follows.

From:　user e-mail address (e.g.: AAXXXX@ZZZZZ.ABC01.NACCS6)
To:　　NACCS center server e-mail address
　　　　　　　　　　　(e.g.: NACCS@SMTP.PROD.NACCS6)

Entry of an e-mail address in From and To fields is mandatory because the e-mail address in the From field is used to authenticate the user at the NACCS's SMTP Two-Way Server and the e-mail address in the To field is used to specify the user's SMTP Server as the message destination.
If the NACCS's SMTP Two-Way Server cannot authenticate the e-mail address specified in the From field, the message is discarded.

(G)　E-mail address used in a message sent to a user

E-mail addresses in From and To fields of the SMTP header in a processing result message sent from the NACCS's SMTP Two-Way Server to a user are specified as follows.

From:　NACCS center server e-mail address
　　　　　　　　　　　(e.g.: NACCS@SMTP.PROD.NACCS6)
To:　　user e-mail address (e.g.: AAXXXX@ZZZZZ.ABC01.NACCS6)

These addresses are specified at the NACCS's SMTP Two-Way Server.

(H)　Notification of E-mail address

The e-mail address used in a message sent to / from a user is provided and announced by NACCS Center. Users must use these addresses.

4.2.5 Procedure sequential processing

Figure 4.2.16 shows procedure sequential processing in interactive processing mode (SMTP two-way). For message classifications, refer to "Chapter 3 Message structure and format".
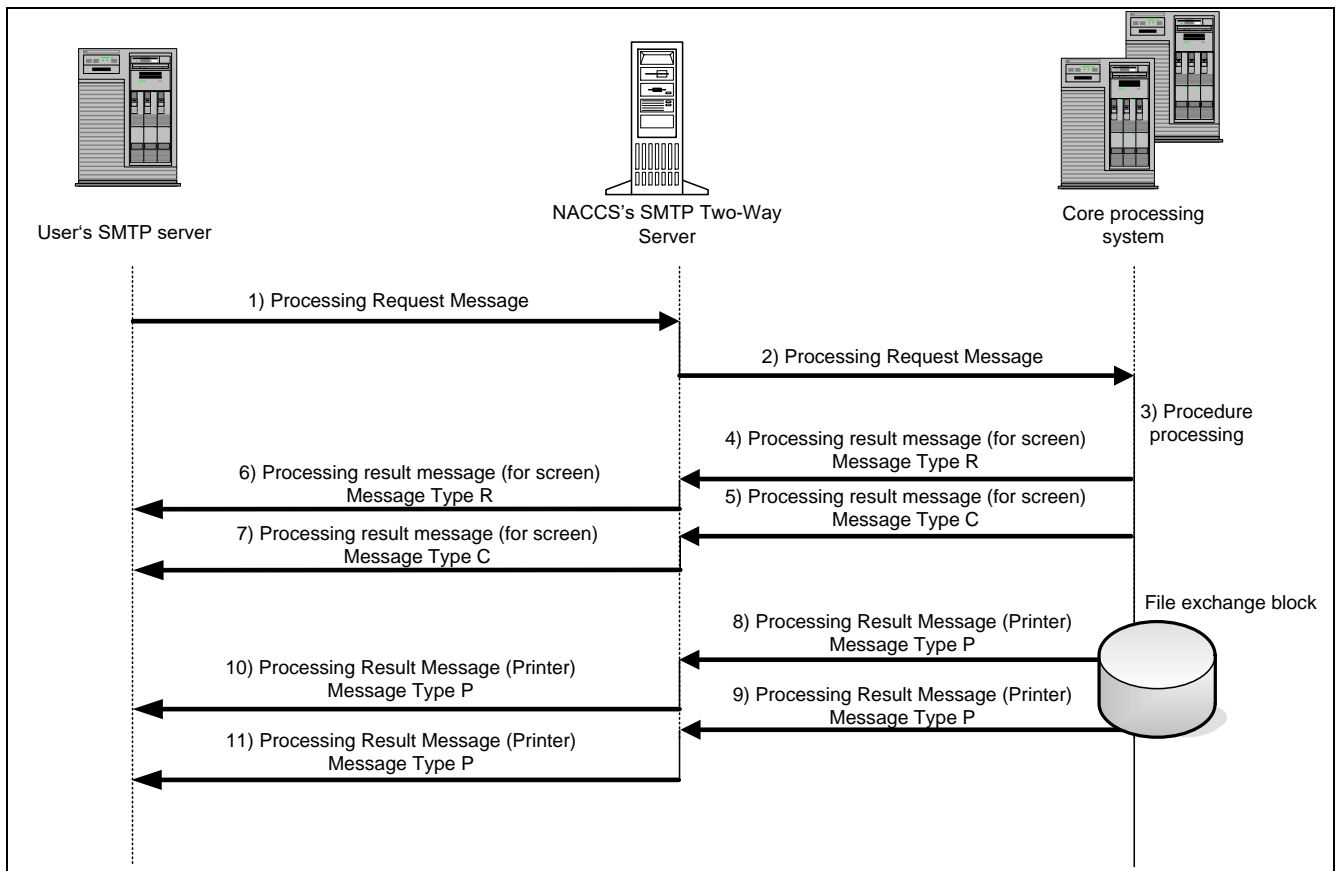

Figure 4.2.16 Example of Processing in Interactive Processing Mode (SMTP Two-Way)

1) User's SMTP server sends processing request message in SMTP to NACCS's SMTP Two-Way Server.
   • For SMTP sending sequence, refer to "4.2.3 Details of communications protocol".
   • As processing request message format is different for each procedure, refer to procedure specifications.
   • Processing request message formats are represented by NACCS EDI format, MIME format and XML format.

2) NACCS's SMTP Two-Way Server checks the message and sends the processing request message to the core processing system.

3) The core processing system checks the message and executes the procedure.

4) and 5) The core processing system sends processing result message (for screen) to NACCS's SMTP Two-Way Server.
   (According to the procedure specifications, there are cases in which more than one processing result message (for screen) will occur. Figure 4.2.16 shows the case in which processing result messages (for screen) of Message Type R and C are sent).

6) and 7) NACCS's SMTP Two-Way Server sends the processing result message (for screen) in SMTP to user's SMTP server.
   • For the SMTP receiving sequence, refer to "4.2.3 Details of communications protocol".
   • Because the processing result message (for screen) formats are different for each procedure, refer to the procedure specifications.

- Processing result message formats (for screen) are NACCS EDI format and XML format.
- 1 mail address of user can only send the next message after the processing result messages (for screen) (message type is either R or C) described in 6) and 7) return to processing request messages described in 1). Therefore, in the user's SMTP server, confirmation must be carried out to check if the processing result messages (for screen) (message type is R or C) described in 6) and 7) has returned to processing request messages described in 1). In addition, because 1 mail address cannot send more than one message at the same time, more than one message can only be sent if there is more than one mail address for the user.

  * According to the procedure specifications, there are cases in which it is not Message Type [R] or [C] but Message Type[M] will return. In these cases, it is necessary to carry out the confirmation procedure to check if Message Type [M] has returned or not.

8) and 9) The core processing system sends the processing result message (for printer) to the NACCS's SMTP Two-Way Server.

  (No processing result message (for printer) may be generated or multiple processing result messages (for printer) may be generated depending on the procedure. Figure 4.2.16 shows a case in which 2 transaction output messages are sent).

10) and 11) The NACCS's SMTP Two-Way Server sends the processing result message (for printer) to user's SMTP server.
- For the SMTP receiving sequence, refer to "4.2.3 Details of communications protocol".
- Because processing result message (for printer) formats are different according to each procedure specification, refer to procedure specification.
- Processing result message (for printer) formats are NACCS EDI format and XML format.

(Note 1) Processing result messages (for printer) have the same patterns as described in "Figure 4.2.7 Image of the interface of the interactive processing mode (SMTP two-way)". It is only necessary to check up with the processing response message if the message type is [R] or [M]

(Note 2) Arrival order toward user's SMTP server of 6**)**, 7**)**,10**)**,and 11**)** is not guaranteed.

(Note 3) EXC message, EXZ message makes the opportunities for the third party to carry out the procedure, but just the sequence of 8**)**,10**)** or 9**)**,11**)** in Figure 4.2.16.

4.2.6　Others

(1) Retention period of messages stored in the output message cache

Users must promptly retrieve the processing result messages in the output message cache. After that, the messages in the output message cache will be deleted.
However, the processing result messages which are not retrieved by users will be retained in the output message cache for 7 days since the registration day (including Saturday, Sunday and National holiday). Message deletion will be carried out at a specified time during the night.
In "Golden Week" (holiday week from the end of April to early May) or New year's holiday, NACCS Center will change the setting for a special retention period.

(Reference) An Example of Deleting the Processing Result Messages Stored in the output message cache

```
                                      (In case if the definite time is temporarily set at 0:30)
        August 1 (Fri.) 12:30                                    August 8 (Fri.) 0:30
         |        August 2 (Sat.) 0:30                                    |
         ↓           ↓      August 3   August 4   August 5   August 6   August 7   ↓
  —————☆—————|—————|—————|—————|—————|—————|—————★————
         |                                                               |
         |←————————————Message's retention period——————————-→|
         |                                                               |
      Registration                                                    Deletion
```
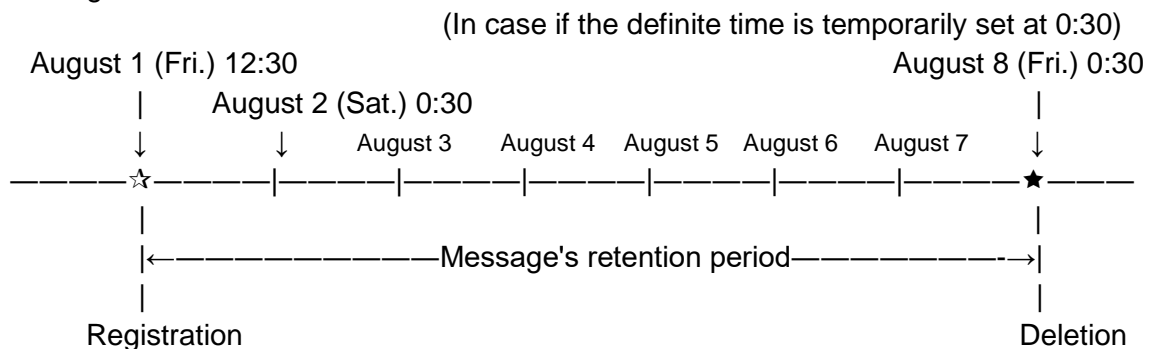
(2) Retention period for attachment files stored in attachment file storage table

For retention period for attachment files for each procedure, refer to Procedure Specifications.

(3) Restrictions

Interactive processing mode (SMTP two-way) users have to obey the following restrictions.

(1) Interactive processing mode (SMTP two-way) installs user's SMTP sever in User system, and can only use if the access line is leased connection or broadband optical connection.
(2) In principle, user's SMTP server must be activated and be in a condition where messages can be received at all times.
(3) If hardware failure occur in NACCS center server and no response returns, users have to wait at least 5 minutes and try to connect with NACCS's SMTP Two-Way Server again, later.
(4) If errors occur in NACCS center server and a processing result notification message returns notifying "Center busy," users have to wait at least 3 minutes and try to connect with NACCS's SMTP Two-Way Server again, later.
(5) Users have to carry out stored message retrieving procedure (REQ), error message retrieving procedure (SYG) periodically (some times a day, if that does not cause the difficulties to the procedures), and to retrieve the messages stored in the output message cache in the NACCS center server. However, carrying out these procedures frequently may overload the NACCS center sever, so it is safer to take an interval of about 30 minutes before executing the next procedure.
(6) If the processing result messages for processing request messages sent by users are not returned in 2 minutes, it is considered that the process has timed out and users must send these messages again.

(4) Other notices

Interactive processing mode (SMTP two-way) users have to pay attention to the notices below.

(1) Messages via the File exchange block in NACCS center server may return to users 2 times due to the timing of damages occur. Because input information is set in the Input Message ID without any changes, it is possible that the second message can be ignored by configuring the user system. (except for EXC messages).

(2) If more than one processing result message occurs in 1 transaction, the arrival order of these messages cannot be guaranteed in User system (Refer to Figure 4.2.17). Therefore, the user system should not be built by assuming that the processing result notification message are executed first.

(3) If NACCS's SMTP Two-Way Server can not complete the connection with user's SMTP server in 3 minutes, NACCS's SMTP Two-Way Server seem to be timeout, the connection will be cut compulsively and the messages will be omitted. However, if these messages are transaction outputs, they will be stored in the Error message queue of the output message cache in the Center. The messages stored in Error message queue can be retrieved if users carry out Error message retrieving procedure (SYG).

(4) When sending the processing request messages, the messages in which the user's mail address in "From" line of SMTP header is not completely consistent will be omitted in NACCS's SMTP Two-Way Server. User system must specify the right mail address and send the messages again.

(5) Because the NACCS's SMTP Two-Way Server sends the receiving completion notification back to the core processing system, users should not send it.

(6) In case of an overload in the system, operation limit such as halts of receiving transaction request messages from all users may be used. In this case, NACCS Center will contact users by telephone, fax, or NACCS notice board, etc.

(7) [Deleted]

(8) If NACCS is operated in the back up center due to a large-scale failure or a large-scale disaster, connect to SMTP two-way server of the back up center.

(9) An environment to test the connection is built partly in the back up center. Therefore, if the main center is affected by a large-scale failure or a large-scale disaster, the system will operate in the back up center, and the connection test may be unavailable.
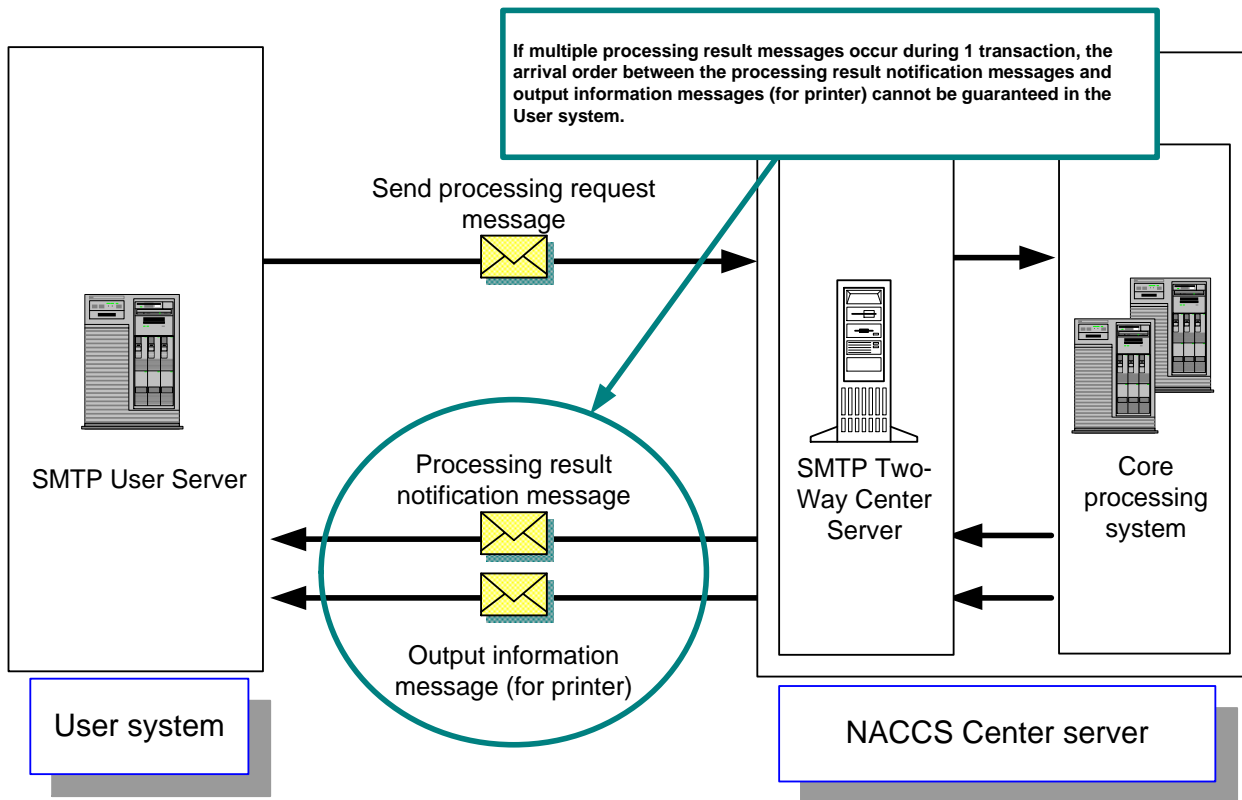
If multiple processing result messages occur during 1 transaction, the arrival order between the processing result notification messages and output information messages (for printer) cannot be guaranteed in the User system.

Send processing request message

Processing result notification message

Output information message (for printer)

SMTP User Server

User system

SMTP Two-Way Center Server

Core processing system

NACCS Center server

Figure 4.2.17 Arrival Order of More than One Processing Result Messages (Example)

Figure 4.2.18 [Deleted]

(5)   Value of each timer classification

Table 4.2.12 shows value of each timer prescribed in interactive processing mode (SMTP two-way). Besides, specified place for each timer is described from Figure 4.2.19 to Figure 4.2.22.

Table 4.2.12 Timer's Value List

ID	Observation content	Timer's value
T01	Observation time for the SMTP connection between user 's SMTP server and NACCS's SMTP Two-Way Server when user sends the message	Specified by user
T02	Time without communication after NACCS's SMTP Two-Way Server opens a connection with user's SMTP server	Specified by user
T03	Time without communication after user's SMTP server opens a connection with NACCS's SMTP Two-Way Server	1 hour
T04	Observation time for the SMTP connection between NACCS's SMTP Two-Way Server and user's SMTP server when the Center sends the message	3 minutes
T05	Time from when the user's SMTP server finishes sending the processing result message until the correspondence processing response message is sent back	2 minutes
T06	Time to re-send in case if NACCS center server or network gets error and no response returns.	5 minutes
T07	Time to re-send in case if errors occur in NACCS center server and the processing result notification message returns notifying "Center busy"	At least 3 minutes
T08	Interval to carry out stored message retrieving procedure (REQ) and error message retrieving procedure (SYG) periodically	It is recommended to take about 30 minute interval before executing the next procedure.

(Note) Value of timer is the specified value in the present system.
(Note) T01 through T08 described in ID column of Table 4.2.12 are the IDs of each timer described from Figure 4.2.19 to Figure 4.2.22.

User's SMTP
server

NACCS's SMTP
Two-Way Server

Request to open a connection

HELO

MAIL

RCPT

T01

DATA

Send the message

<CRLF>.<CRLF>

QUIT

T03

Request to open a connection

HELO

MAIL

RCPT

T02

DATA

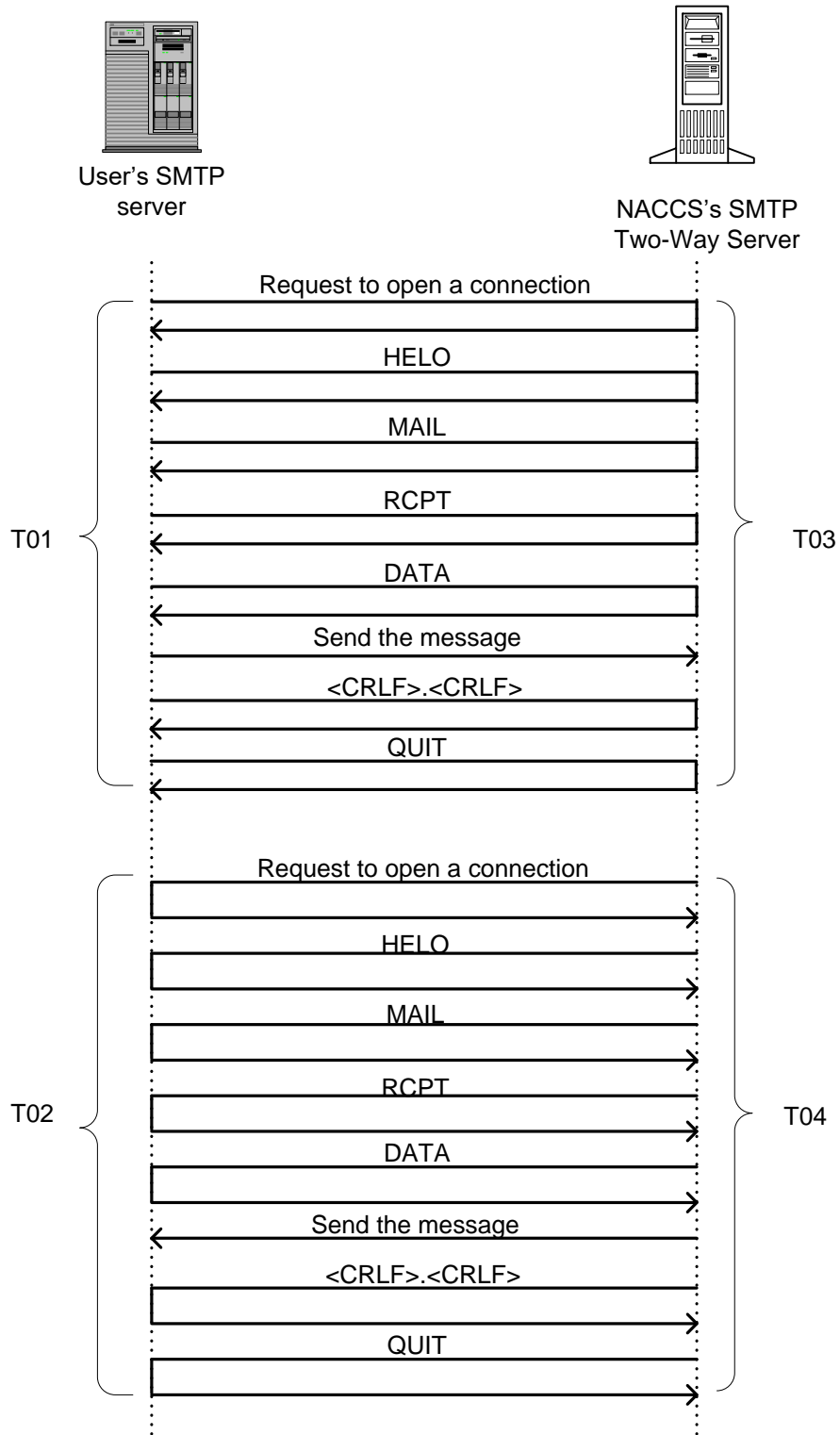Send the message

<CRLF>.<CRLF>

QUIT

T04

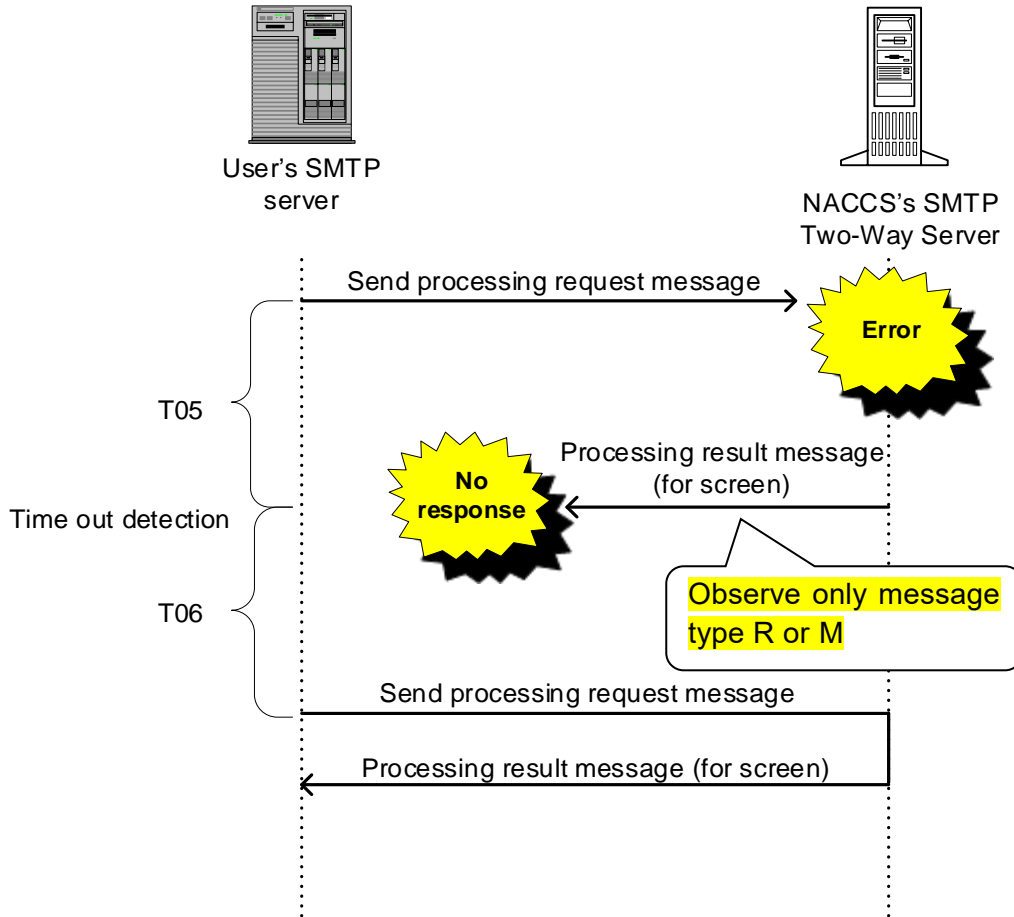Figure 4.2.19 Setting Timer in Normal Communication
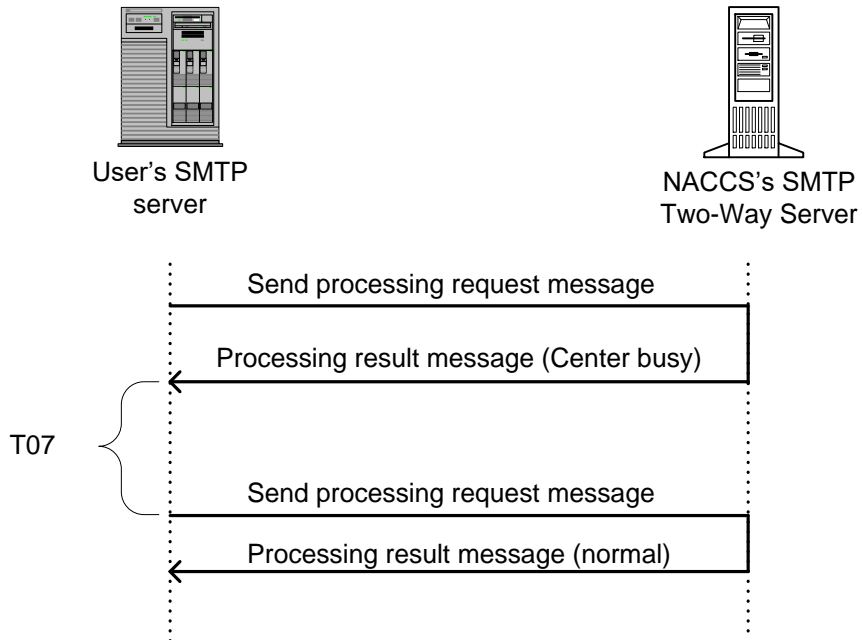
Figure 4.2.20 Observation Timer for Processing Result Message
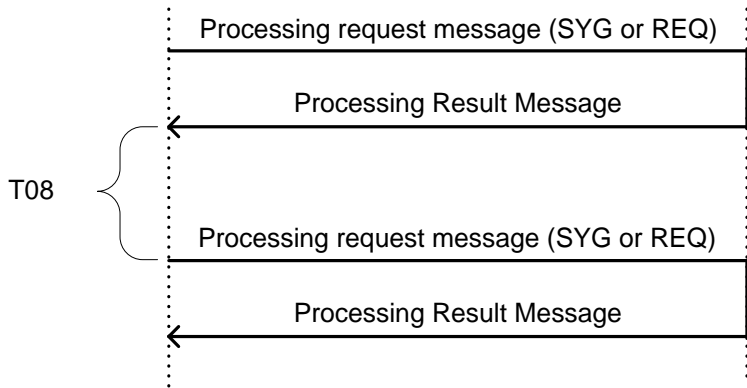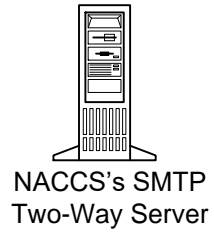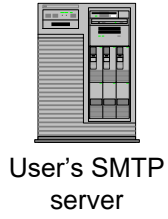

Figure 4.2.21 Setting Timer in Case Center is Busy

Figure 4.2.22 Setting Timer for SYG Procedure, REQ procedure